

UTILIZING THE "SCARAB" INTERACTIVE TECHNOLOGY IN MOLECULAR GENETICS EDUCATION

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Abstract. *This article presents an analytical overview of the "Scarabey" interactive technology to make the teaching of molecular genetics engaging and comprehensible for students.*

Keywords: *innovative pedagogy, pedagogical technology, innovative methods, Scarabey, pedagogical approaches, focused research, competency-based approach.*

To understand the main directions of educational reforms based on the "Law on Education" and the "National Program for Personnel Training," it is crucial to explore the fundamental objectives being pursued in the field of education. These objectives include:

- Improving the content and system of education;
- Enhancing educational management;
- Creating mechanisms for integrating education into the market economy;
- Developing new and innovative approaches for parents, teachers, and students in the educational process;
- Implementing powerful pedagogical technologies as the driving force behind these reforms.

Contemporary education has embraced innovative pedagogy, and the term "innovative pedagogy" and related research emerged in Western Europe and the USA during the 1960s. Innovative practices have been studied by researchers such as F.N. Gonobolin, S.M. Godnin, V.I. Zagvyazinskiy, V.A. Kan-Kalik, N.V. Kuzmina, V.A. Slastenin, and A.I. Shcherbakov. These studies focus on highlighting new and effective pedagogical experiences and ideas.

Innovative processes in education, managing changes in teaching, and the necessary conditions for the vitality and activity of innovation have been analyzed in the works of X. Barnet, Dj. Basset, D. Hamilton, N. Gross, R. Karlson, M. Mayez, A. Xeyvlok, D. Chen, and R. Edem.

"Skarabey" is an interactive technology that enhances students' intellectual curiosity and contributes to the development of reasoning and memory in the teaching of molecular genetics. It helps students to effectively address problems and express their ideas freely and independently. This technology allows for individual assessment of the quality and level of knowledge independently on the topic being learned, as well as the ability to identify concepts and ideas related to the subject and express various perspectives and their connections.

"Skarabey" technology is easily adaptable for students as it is designed based on their cognitive and learning characteristics. It enables students to benefit from their experiences, actively explore and gain practical and conceptual experience.

"Skarabey" technology can be utilized in various activities, small group work, and practical exercises.

It is used in different stages of learning materials as follows: Initially, to stimulate the learning activity ("Intellectual attack");

During the learning process, to identify its essence, structure, and content; to identify the main parts, concepts, and interrelations; to further deepen the learning process and demonstrate new aspects;

Finally, to consolidate and verify the acquired knowledge.

Several features of this technology can be considered facilitating its understanding. Besides, the technology provides an opportunity to achieve the following educational objectives:

Respect for the views of others;

Working with peers;

Providing opportunities;

Positiveness;

Stimulating creative thinking;

Assessing one's abilities and capabilities;

Expressing oneself;

Taking responsibility and showing interest in their activities.

Psychotechnical games are considered a specific type of didactic games. These games are considered as a teaching method that shapes students' skills such as memory, attention, thinking, and imagination. Psychotechnical games contribute more to the development of students' knowledge, skills, and competencies.

Experts in innovative technologies recommend the above-mentioned technologies for various areas of activity. The following activities are organized in accordance with the various directions of this activity:

Training high school teachers in new pedagogical technologies;

Training faculty members of educational institutions;

Training some category of leaders of educational institutions;

Training academic group mentors in educational technologies.

In these areas, modern pedagogical technologies are developed, technological maps are created, and supplementary materials are prepared and used practically. Short seminars are also conducted in such activities. Guidelines are created considering the specific features of the educational process of each educational institution.

Today, the teaching of economic disciplines in high and secondary specialized educational institutions faces important problems, such as creating, assessing, and developing new curricula for economic education in accordance with modern pedagogical technologies. In this regard, the concept of "stage-based education" is recommended, which is capable of adapting the elementary economic education to the level of economic culture and economic literacy.

It should be noted that monitoring and evaluation of knowledge is only part of the teaching process and is not limited to the teacher's (educator's) competence, and it does not give the opportunity to achieve knowledge by the students; to have the level of their knowledge increased due to their creative efforts. Although the quantity of knowledge provided increases, the level at which students can internalize this knowledge is limited. In this regard, modern pedagogical technologies and teaching methods play an important role in achieving uniform, in-depth knowledge and skills of students. For this purpose, monitoring and evaluation of knowledge are introduced into the educational process of higher and secondary specialized institutions.

In the rating system, one of the essential methods for monitoring the quality of economic education at various stages is to use tests properly designed and organized. The creation of tests is based on the methodological theory of testology.

In conclusion, it can be stated that our youth, who receive proper upbringing and education, possess high moral values, professional competence, critical thinking, and a positive attitude. They are well-prepared and ready to meet the demands of the modern era. To address the challenges of educating and nurturing such mature and responsible individuals, both practical and theoretical methods are being applied by all enlightened citizens.

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